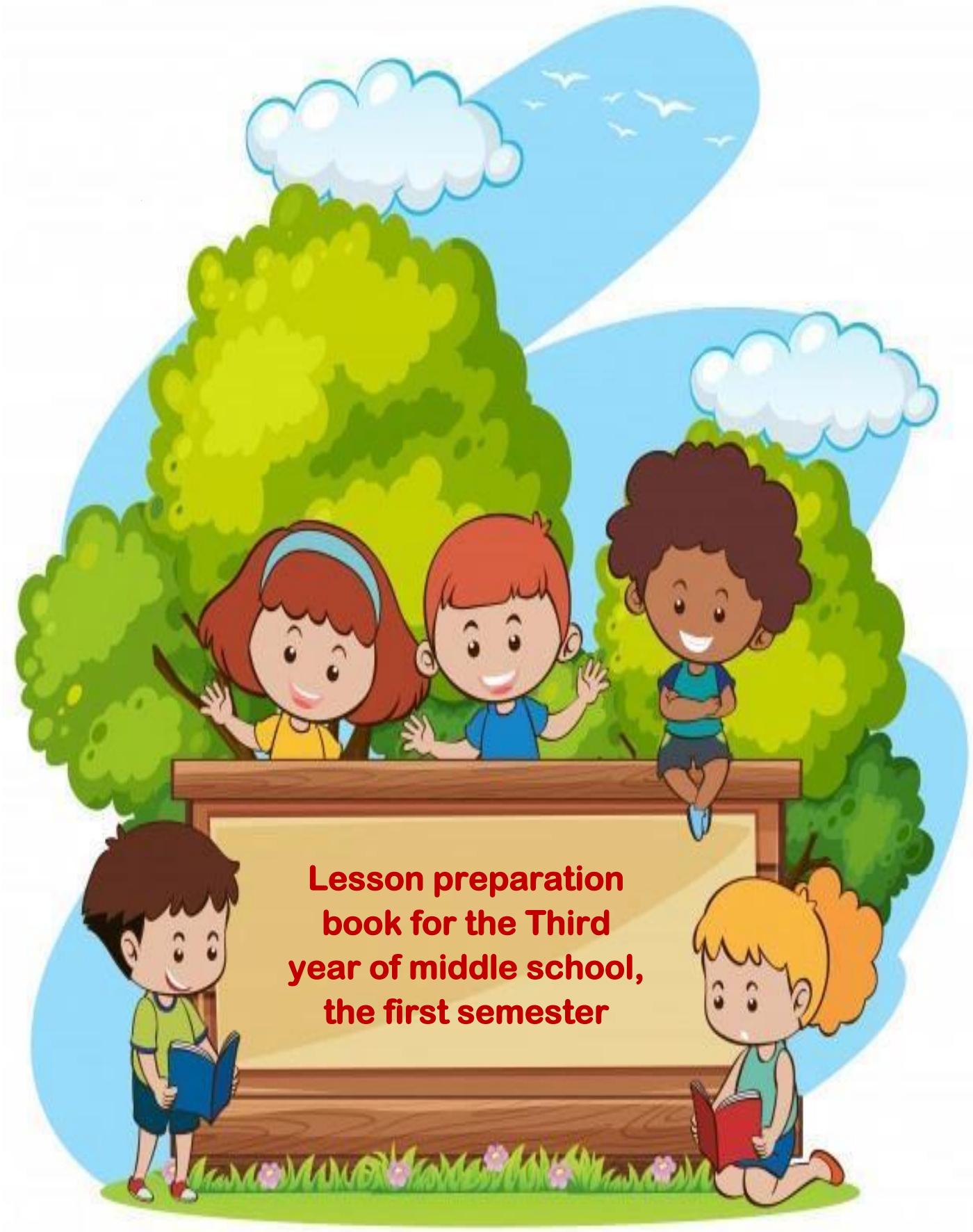

Lesson preparation
book for the Third
year of middle school,
the first semester

The specific objectives of teaching the computer and information technology book for the Third year of middle school.

- **Problem Definition**
- **Define the stages of problem solving**
- **Write the steps to solve the problem ("Algorithm")**
- **Draw flowcharts that reflect the steps of the solution.**
- **Explain what is meant by programming language.**
- **Identify the essence of Visual Basic.net**

  Identify the main components of IDE screen
- **Enumerate what Framework.Net can provide**
- **Recognizes what Visual Basic.NET is.**
- **Recognize the Properties Window.**
- **Choose the appropriate property .**
- **Choose the appropriate value for the property(Property .)**
- **Differentiate between controls Properties.**
- **Deals with the Code Window.**
- **Specifies what is meant by the event handler.**
- **Adjust Controls' Properties programmatically.**

Date				Lesson (١) Problem Solving	strategy
Class					Brainstorming problem solving
Period					
By the end of the lesson students will be able to: • Know the problem and the stages of its solution. • Arrange the steps to solve the problem. • Develop steps for solving some life problems.					"Preface" - What do we mean by problem?

Accompanying activities

Take the students to the computer lab and ask them the introductory question and discuss the answers through brainstorming to give a life picture and the way to solve it for the main lesson points through a video showing the elements of the lesson.

Lesson View

1 - A problem: - Problem is a situation that requires a solution.

Or an objective you want to achieve.

2 - Problem Solving: - Problem Solving is the steps, activities, and processes to be done to reach an output or objective.

3 - Problem solving Stages

1 - Problem Definition: -

2 - Algorithm Preparation: -

3 - Program design: -

4 - Program testing: -

5 - Program Documentation: -

Evaluation

Complete:

* Step ..... is the first step in solving the problem?

Date				Lesson (2) Flowchart	strategy
Class					Cooperative learning- Practical application
Period					

By the end of the lesson students will be able to:

- **Know flowcharts.**
- **List flowchart instructions.**
- **implement the lesson exercises in a correct way.**

"Preface"

- What do we mean by flowcharts?

Accompanying activities

Take the students to the computer lab and ask them the introductory question and show them a video clip that shows flowcharts and directions they drew and discuss it with them while carrying out the activities (1-1), (1-2), (1-3) in the student book

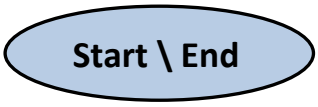
Lesson View

****Flowchart**: - It is a diagram that uses standard graphical symbols to illustrate the sequence of steps required for solving a problem or specific question.

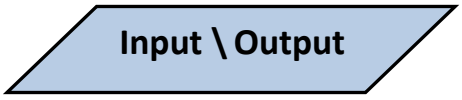
****Some advantages of flowcharts:**

****Forms used in flow chart: -**

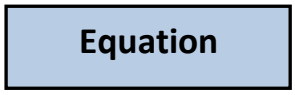
1 - Terminal



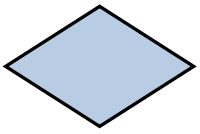
2 - Input / Output



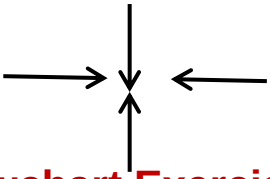
3 – Process



4 – Decision



5 - Flow Lines



****Simple Flowchart Exercises**

- Exercise (1-1) flowchart to add two numbers
- Exercise (1-2) Flowchart to solve a first-order equation map Y = 3X + 2

Evaluation

****Put (true) or (false)**

Flowcharts use standard shapes and lines to represent the steps in solving a problem( )

Date				Lesson (3) Follow: Flowchart Branching - deciding	strategy
Class					Cooperative learning- Practical application
Period					

By the end of the lesson students will be able to:

- **Understand the concept of branching in flow charts.**
- **Define the definition and steps of the solution to the program correctly.**
- **Execute the lesson exercises in a correct way.**

"Preface"

- What do we mean by branching and decision making??

Accompanying activities

Take the students to the computer lab and ask them the introductory question and show them a video explaining the concept of branching in the flowchart and the instructions for drawing it and discuss it with them while implementing the activity (1-4) in the student book.

Lesson View

It is used if the problem (the program) contains a question that requires a yes or no answer or requires branching into other operations that are determined through the flow chart.

Exercise (3-1)

Draw a flowchart to print the word "successful" if the entered score is greater than or equal to 50

Define the problem

Output: print successful
Input: the score "X".
Solution: If the value of X is greater than or equal 50, a successful message is printed

Second steps of the solution:

1- Start

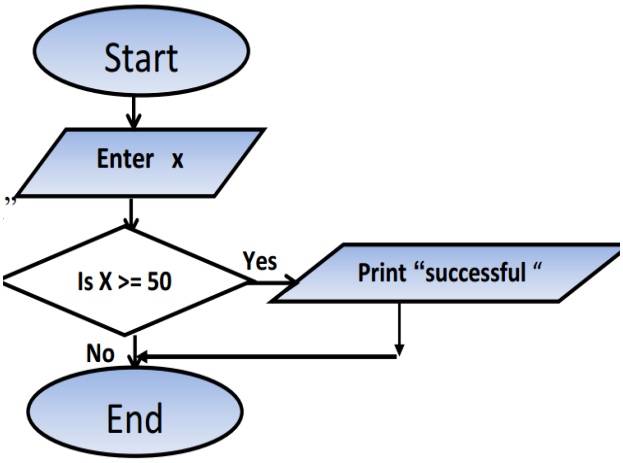
2- Enter the values of X

3- **If** X> =50 **Then**

3-1 Print "successful"

4- **End**

Third: Draw a flow chart.



- Determining the solving steps to implement the exercise (1-4) The result of dividing two numbers

Evaluation

**Put (true) or (false)

The rectangle is used to represent branching in the flowchart ( )

Date				Lesson (4) Follow: Branching	strategy
Class					Cooperative learning- Practical application
Period					

By the end of the lesson students will be able to:

- **Understand the concept of branching in flow charts.**
- **Define the definition and steps of the solution to the program correctly.**
- **Execute the lesson exercises in a correct way.**

"Preface"

- Through branching, how do you determine if a number is even or odd?

Accompanying activities

Take the students to the computer lab and ask them the introductory question and show them a video explaining the concept of branching in the flowchart and the instructions for drawing it and discuss it with them while implementing the activity (1-5) in the student book.

Lesson View

**Steps for the solution to implement exercise (1-5):

Draw a flowchart for a program that obtains a number from the user. Determine the number type (even or odd) and print the result.

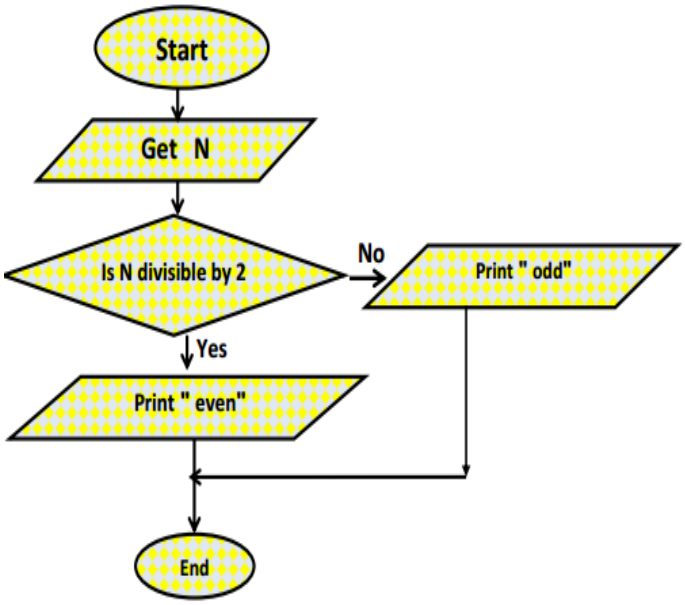
Define the problem: -

Output: print the number type (even or odd).
Input: the number "N".
Solution: the even number is determined if the entered number is divisible by 2 without remainder, otherwise it will be odd.

Second steps of the solution:

1 -Start
2 -Enter N
3 -**If** N is divisible by 2 **Then**
    3-1 Print "even number"
4 –**Else**
    4-1Print "odd number"
5- End

Third: Draw a flow chart.



**Determine the solution steps to implement the exercise (1-6) temperature.

Evaluation

**Put (true) or (false)

Testing the validity of the program is to write down all the steps that were taken to solve the problem ( )

Date				Lesson (5)	strategy
Class				**Follow**: Flowchart The iterative loops	Cooperative learning- Practical application
Period					

By the end of the lesson students will be able to:

- **Understand the concept of iterative loops.**
- **Iterative loops are used in simplifying the flowcharts.**
- **Execute the lesson exercises in a correct way.**

"Preface"

- How can a flowchart be simplified through iteration?

Accompanying activities

Take the students to the computer lab and ask them the introductory question and show them a video explaining the concept of branching in the flowchart and the instructions for drawing it and discuss it with them while implementing the activity (1-١) (1-7) in the student book.

Lesson View

**Steps for the solution to implement exercise (1-7):

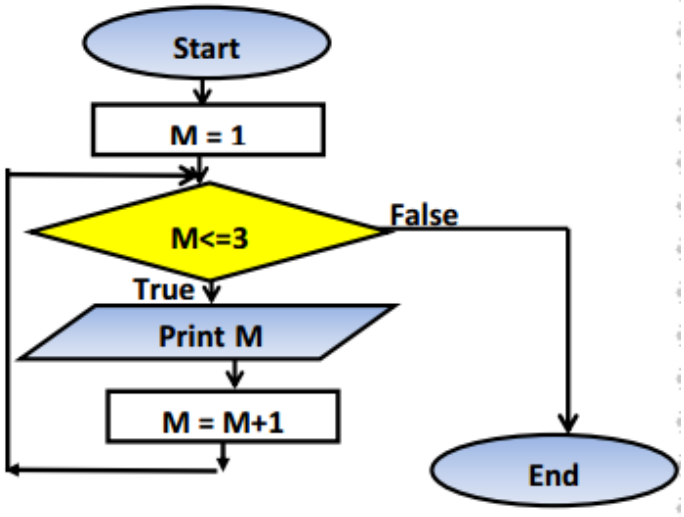
Draw a flowchart to Print out numbers from 1 to 3.

Define the problem: -

Output: print numbers from 1 to 3
Input: number M
Solution: print number M and increase it by 1 then continue printing until the value of M become greater than 3

Second steps of the solution:

1- Start
2- M=1
3- **If** M<=3 **Then**
3-1 Print M
3-2 M=M+1
3-3 Go To step (3)
4- **End**



Third: Draw a flowchart.

**Define the solution steps to implement the training (1 - 8) modify the flowchart

Evaluation

**Put (true) or (false)

Documenting the program means ensuring that the program is free of errors ( )

Date				Lesson (6) loops (2)	strategy
Class					Cooperative Education Practical application
Period					
By the end of the lesson the student will be able to: • Understand the concept of recurring loops. • Use iterative loops to simplify flow maps. • Trained to implement the lesson exercises in a correct manner.					"Preface" How can you print the sum of integers from 1 to 3?

Accompanying activities

Take the students to the computer room and ask them the introductory question and show them a video explaining the concept of repetitive loops and the way to implement it through training and discuss it with them while implementing the two activities (1-8) (1-9) in the textbook.

View Lesson

Determine the solving steps:

To implement exercise (1-9): to draw a flow map to print the sum of the integers from 1 to 3

First, define the problem:

• Output: printing the sum of integers from 1 to 3 - Inputs: (Number)

• Processing / solving: (Printing the number M, then increasing it by 1, then printing until M becomes greater than 3

Second steps of the solution:

1- Start 2- N=1 3- Sum = 0 4- Sum= Sum+N

5- N= N+1 6- if N> 3 6-1 Print Sum 6-2 other

7- Go to step 4 8- End

Third draw a flow map:

Solve the questions of the first chapter

Evaluation

Put the word (true) or (false)

Flowcharts make it easier to understand and analyze the problem ( )

Date				Lesson (7)	strategy
Class				Introduction to Visual Basic.net	Cooperative Education Practical application
Period					

By the end of the lesson the student will be able to:

- Explains what is meant by the programming language.
- Identified the most important components of an IDE monitor
- List what the .Net Framework provides

"Preface"

How can the solution steps be converted into programming commands that can be executed?

Accompanying activities

Take the students to the computer room and ask them the introductory question and explain to them the concept of the programming language in Visual Basic and discuss it with them with a practical presentation of the program screen and its main components, explaining the main lesson points.

View Lesson

Visual Basic.net Language:

It is a high-level programming language that is easy to learn and writes its commands in English, through which it can produce office and web applications. It is considered an object-oriented language because its programs run through objects in the computer's memory and are event-oriented because commands and instructions are executed when a specific event occurs.

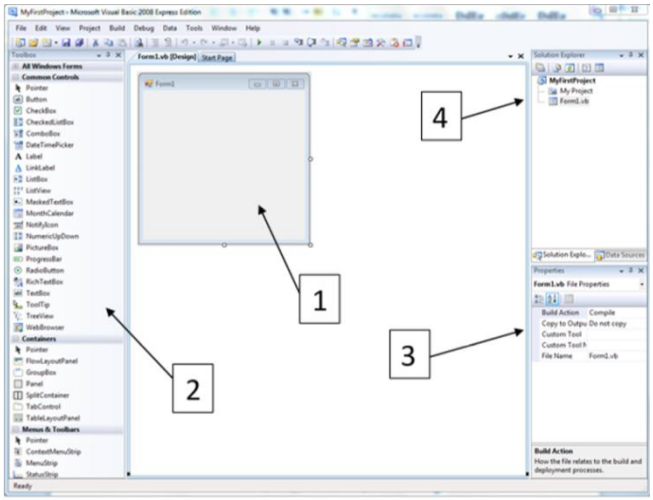
The most important components of an IDE monitor:

1 - Form window

2 - Toolbox

3 - Properties window

4 - Solution Explorer



The .Net Framework provides:

- Libraries from which objects are created.
- Runtime environment
- Compilers

Evaluation

List the most important components of an IDE monitor.

Date				Lesson (8)	strategy
Class				Solve the questions of the second chapter	Performance based evaluation
Period					

By the end of the lesson the student will be able to:

- **Prove the information, meanings and knowledge acquired in the second semester.**
- **Divide the course into units of study that are easy to review and retrieve.**
- **Solve according to the questions in the second chapter.**

"Preface"

What are the most important topics of the second chapter?

Second: Choose the correct answer to complete each statement:

1-Object Oriented programming language depends on:

a- using Windows applications.
b- Using Web applications
c- Objects in computer memory.

2-You can produce Windows applications or Web applications by using:

a- Objects in computer memory
b- VB.net language
c- Properties and Events

3- Characteristics which describe the object such as size, name and colour are called:

a- Properties
b- procedures
c- Events

4-Click on Button is:

a- property
b- procedure
c- Event

5-Commands and instructions which we want to carry out are called:

A -properties
B -producers
c - Events

Date				Lesson (9)	strategy
Class				Properties of control tools. FORM	Dialogue and discussion. Practical application.
Period					

By the end of the lesson the student will be able to:

- • Recognizes the window properties
- • Choose the appropriate property and its value.
- • differentiate between the characteristics that characterize each of the control tools.

"Preface"

What are the most famous properties of the tools and do they change with the change of the tool?

Accompanying activities

Take the students to the computer room and ask them the introductory question and explain to them the concept of the properties window and its contents and discuss it with them with a practical demonstration of the properties of the FORM and how to adjust them with the application.

View Lesson

Form properties and function:

N	Property name	Function
1	Name	Name of Form used in Code Window.
2	Text	The appeared Text on the title bar of the Window.
3	Backcolor	The background color of the Form.
4	Right to Left	The direction of Controls on the form Window From Right to Left.
5	Right to Left layout	The layout of Controls on the Form from right to left.
6	MinimizeBox	It controls the appearance or disappearance of MinimizeBox of Form Window.
7	MaximizeBox	It controls the appearance or disappearance of MaximizeBox of Form Window.
8	ControlBox	It controls the appearance or disappearance of ControlBox of Form Window.
9	FormBorderStyle	The Border style of Form Window.
10	WindowState	It defines the Window State of the Form (Maximizing, Minimizing or normal).

Evaluation

The …… property is used to change the text that appears on the title bar of the form

Date				Lesson (10)	strategy
Class				Properties of control tools.	Dialogue and discussion
Period				Button – label – textbox	Practical application

By the end of the lesson the student will be able to:

- Draws a button on the form window and changes its location.
- Sets the front and back color properties of the command button
- Controls the size of the label tool and sets its limits.
- Sets the text box properties.

"Preface"

What is the difference between the title tool and the text box?

Accompanying activities

Take the students to the computer room and ask them the introductory question and discuss them in the teams in a working manner, showing the set of properties of the command button and how to put it on the form and modifying the properties of the tools in the lesson in a practical way with the application.

View Lesson

Command Button Properties:

N	Property	Function
1	Location	The location of placing Button on the Form.
2	Size	Defining the height and width of Button on the Form.
3	Text	The appeared Text on the Button
4	BackColor	Choosing the backColor of the Button.
5	Font	Defining (shape, size and style) of the Text font appeared on the Button.
6	ForeColor	Choosing the ForeColor to the appeared Text on the Button

Label properties:

N	Property	Function
1	AutoSize	The Size of the Label is defined automatically according to the written Text if the Value of property equals true.
2	BorderStyle	Choosing the Border Style of the Label

Textbox properties:

N	property	Function
1	Maxlength	It defines the maximum number of letters which can be inserted in the TextBox
2	PasswordChar	It defines a symbol used instead of written text in case we have a password.
3	Multiline	allows multiple lines within the text box control tool.

Evaluation

Property that allows the possibility of multiple lines inside the text box is .....

Date				Lesson (11) Control's Properties List Box-Combo box	strategy
Class					Dialogue and Discussion. Practical application
Period					

By the end of the lesson the student will be able to:

- box and a combo box between a list Differentiate.
- the properties of the tools Correctly set.
- the common characteristics between the two tools Distinguish.

"Preface"

What is the difference between list box and combo box ?

Accompanying activities

room and ask them the introductory question and Take the students to the computer discuss them in the teams in a practical way, showing the set of properties of each of them and how to put them on the model and modify the properties of the tools in the pplicationlesson in a practical way with the a.

View Lesson

Combo box

Function

down list of items to choose from-A drop

Properties

N	Property	Function
1-	Items	A group of items which are shown in comboBox.
2-	AutoCompleteSource	It is a source of suggested items to select from.
3-	AutoCompleteMode	It defines the method of list completing process.

List box

Function

Displays a list of items

Properties

N	Property	Function
1-	Items	A group of items shown in the ListBox
2-	Sorted	It defines whether the elements in the list are sorted or not.
3-	selectionMode	It defines whether it is possible to choose one item or more shown in the ListBox.

Evaluation

Complete: - the process of The property ……determines the way in which completing the list will be carried out

Date				Lesson (12) Control's Properties Group box - Radio button - check box	strategy
Class					Dialogue and Discussion. Practical application
Period					

By the end of the lesson the student will be able to:

- Employ the group box in correct way.
- Dbetween a checkbox and ifferentiates Radio button.
- Sthe properties of the tools et correctly.

"Preface"

What is the difference between radio button , check box ?

Accompanying activities

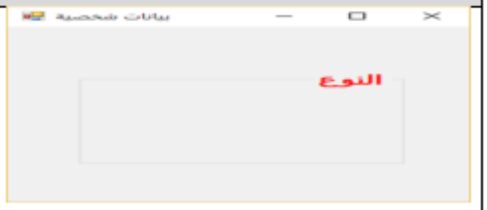
the students to the computer room and ask them the introductory question and Take discuss them in the teams in a practical way, showing the set of properties of each of them and how to put them on the model and modify the properties of the tools in the n a practical way with the applicationlesson i.

View Lesson

Group Box :

Is used to group other controls of same function together on the Form window

Here is the effect of setting some properties on the Group Box:

Property	value	Effect of property appears	FormWindow after setting the property
Text	النوع	In design mode and runtime mode	
Forecolor	Choose the Red color		
RightToLeft	yes		

(Radio Button):

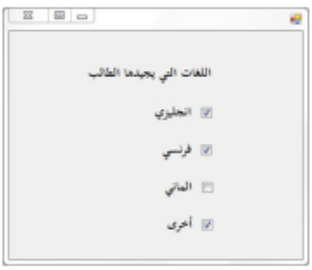
The programmer user selects one alternative only.

Here is the effect of setting some properties on the Radio button:

N	property	Function
1-	Checked	It shows whether RadioButton has been chosen or not.
2-	Text	It is the Text shown on RadioButton

(Checkbox):

It is used for placing some alternatives to enable the user to select one Checkbox or more.



Evaluation

Complete: - the questions of the third chapter solving.

Date				Lesson (13) CODE WINDOW	strategy
Class					Dialogue and Discussion. Practical application
Period					
By the end of the lesson the student will be able to: • Work with the Code window. • Define the Event Handler. • Create event handler is command button click.					"Preface" Where do you write program commands and instructions?

Accompanying activities

Take the students to the computer room and ask them the introductory question and with them, showing the different ways to open the code window, explaining the discuss it concept of the event handler and how to implement it in a practical way.

View Lesson

CODE WINDOW :

opened by ithin the program andThrough it, commands and instructions are written w pressing the F7 key after making sure that the (FORM) window is active and contains :

(1) Name of the file where codes are saved.
(2) Name of the file where the Form window interface is saved.
(3) The declaration of Class; its name is (Form1).
(4) Space between two lines; to type codes for the Class (Form1).
(5) The end of the class (form 1).

Event Handler

It's a procedure which contains a code that is carried out when a corresponding event occurs.

Action name consists of

(1) The procedure name composed of (object name, event name).
(2) End of procedure line.
(3) What causes the call of the procedure (event occurrence) .
(4) Between the two lines shown; the code that will be executed on calling the procedure is written after the occurrence of the (Event
(5) The declaration of the class line (frmSquare)
(6) The end of (class) line.

Evaluation

Complete: - Mention the way to open the codewindow.

Date				Lesson (14)	strategy
Class				Programmatically set properties	Brainstorming Dialogue and Discussion.
Period					

By the end of the lesson the student will be able to:

- programmatically adjusting the the general formula for Recognizes properties of tools
- adjust the properties of the controls Programmatically.
- questions in Chapter Four according to the Solve .

"Preface"

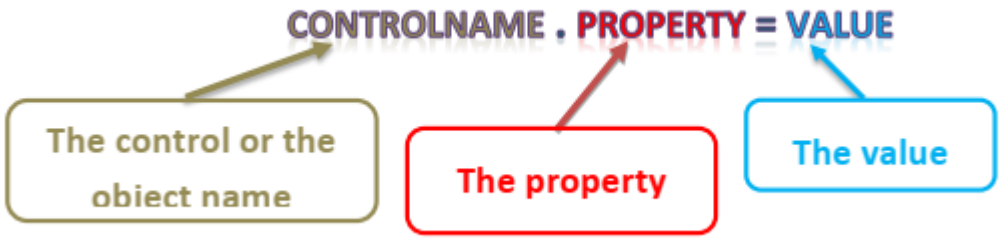
How can I set the properties of the tools programmatically?

Accompanying activities

Take the students to the computer room and ask them the introductory question and formula for modifying the properties of the discuss it with them, showing the general different tools, giving examples and applying them. With the solution of the fourth .chapter questions

View Lesson

We previously set the properties through the properties window, and you can set the ties in the following formproper :



Example (1):

Write the following code in the appropriate event handler, let it be (BUTTON1_CLICK) for the command button BUTTON1 :

When the event occurs, the form window appears as shown :

```
Private Sub Button1_Click(sender As Object, e As EventArgs) Handles Button1.Click
        Label1.Text = "جمهورية مصر العربية "
End Sub
```

Evaluation

solving the questions of the third chapter

Complete: Write the code to change the background color of label1 to red.

Date				Lesson (15) General Review	strategy
Class					Performance based evaluation
Period					

By the end of the lesson the student will be able to:

- **the information, meanings and knowledge acquired Prove.**
- **DThe curriculum into units of study that are easy to review ivide and retrieve.**
- **as required by the questions in the review Solve.**

"Preface"

What are the main topics of the Student's book?

Accompanying activities

Take the students to the computer room and ask them the introductory question, show them the home page of "Al Azhar Al Sharif Website", and have each workgroup list the contents of the site, and show them to other groups and discuss them for the basic points of the lesson.

View Lesson

- **Put √ or X :**

1. You can open the code window through the solution window. ( )
2. List box Controller It is used to receive the user's text data while the program is running. ( )
3. (Form) screen has all the tools and propertiesa programmer needs . ( )
4. .Net Framework runs net applications. ( )
5. Group Box is used to hold single-function Controls on the form window. ( )

- **Complete the following statements using the given words :**

(Combo Box – Radio Button – Checkbox – List Box - Group Box)

1. **.....**ichoose one alternative from s used if we want the user of the program to several alternatives.
2. .....is used in containing a group of controls that have the same function on the Form.
3. .....i s a box with a list of items that you can drop down to choose oneof them.
4. ..... Used if we want the user of the program to choose one or more alternatives.

- **Correct the underline:**

- open the Code Window We press the F4 key.
- is the last stage of problem solving design.
- Multiline number of characters that can be typed into the property sets the maximumtextbox.
- Sorted property A set of items displayed onthe List box.
- phase means entering data whose results are known before to identify program documentation errors.
- ated by theThe name of the event handler when gener IDE consists only the name of the of controller.
- The value assigned to Label.text =" egypt " is Text
- Auto size property defines the shape of the borders ofthe Label widget.
- Object Events shape what describes the object and determines its mean.
- Back color tool property is used to specify the shape, size, and effect of the font on any.